



Iberian shelf overview: Environmental processes that shaped the continental platform.

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Continental shelves are highly dynamic environments that represent 8% of the world's marine area. Shelves are composed by several morphological elements that mainly include an area with very gentle slope ($\sim 0.01^\circ$) and the shelf break (at depths that may in general vary between 80 and 220 m depth) characterized by an abrupt change in the slope before the continental slope. Despite these common features the shelves depict a great heterogeneity both in terms of shelf edge and the shelf area. These are the results of the actuation of number of processes that can have different origins (tectonic, oceanographic and climatic) and may lead to different evolutionary paths.

The Iberian shelf is a complex area shaped by great variety of processes strongly controlled by its tectonic history (extension and inversion) since Middle Mesozoic, as results of the Pangea break-up. Iberia has been strangled within the Africa-Eurasia plate boundary. Many geological and tectonic features seem to determine a unique shelf where, for example, old Variscan structures and fabrics seem to be being reactivated in the Atlantic side, while tectonic rejuvenation is occurring at the Mediterranean side. Also, the Atlantic margin depicts a mature wide shelf with high grade of canyon incision. The Mediterranean margin, on the other hand, depicts a narrower and younger shelf, strongly controlled by recent events such as neo-tectonic deformation and the Messinian Salinity Crisis (MSC).

Previous studies mainly classified and characterized the continental shelf following the geographical position of their sectors. In this work, we propose a new characterization of the Iberian shelf based on a detailed description of the existing morphologic features and associated controlling processes. To perform such analyses we used 80 different profiles along the Iberian margin, classifying the shelf morphology in terms of extension and shelf-break depth, which allowed us to get insights on the dominant processes involved in shapping of the shelf.

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